Kansas City Ozone

The federal Clean Air Act (CAA) requires the U.S. Environmental Protection Agency (EPA) to promulgate National Air Quality Standards (NAAQS) for six classes of criteria pollutants. The six criteria pollutants are: ozone, particulate matter, sulfur oxides, nitrogen oxides, carbon monoxide, and lead. The CAA further requires that if any area fails to attain the standard for any criteria pollutant, the respective state must develop and implement a State Implementation Plan (SIP). The map on the right shows the location of the ozone monitor in Kansas City, KS as well as additional sites for other pollutants.

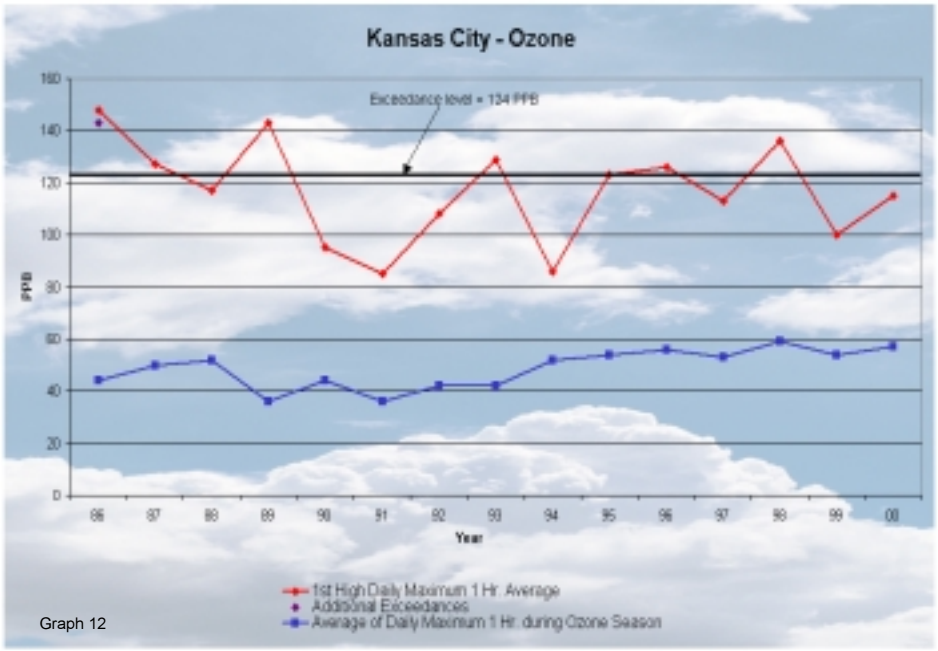
The Kansas City Metropolitan Area (KCMA) was determined to be in violation of the ozone NAAQS in the 1970's. Subsequently, the state of Kansas developed and implemented an ozone SIP for the Kansas side of the KCMA, which includes the counties of Johnson and Wyandotte. EPA approved the 1979 Kansas SIP, which projected that the KCMA would meet the ozone NAAQS by December 31, 1982. However, in calendar years 1983 and 1984, the ambient air monitor data for the region revealed that violations of the ozone NAAQS had occurred. These violations required the state to make revisions to the 1979 SIP.

Photo by: Gary Ficklin, KDHE

Accordingly, the SIP was revised to include additional control measures for the region. With further reductions of volatile organic compound (VOC) emissions in the area, the new SIP projected the area would be in attainment of the ozone NAAQS by December 31, 1987. In November 1989, the SIP was fully approved by the EPA. However, efforts to redesignate the area to attainment were halted when the area experienced several exceedences of the ozone standard in 1988.

Kansas and Missouri continued monitoring for ozone in the area. At the end of 1991, sufficient monitoring data was available which demonstrated that the area had attained the standard. Under the provisions of the federal Clean Air Act Amendments of 1990, KDHE revised the SIP for the KCMA to reflect that the KCMA had achieved the ozone standard. A Maintenance Plan, which the EPA approved on June 23,1992, contained documentation that supported the redesignation of the area to attainment and provided for contingency measures if violations of the ozone standard occurred in the future.

In the summer of 1995, the Midwest experienced a period of severe hot weather, with temperatures exceeding 100° for several days. During this hot spell, the KCMA recorded a violation of the ozone standard at the Liberty, Missouri monitor-

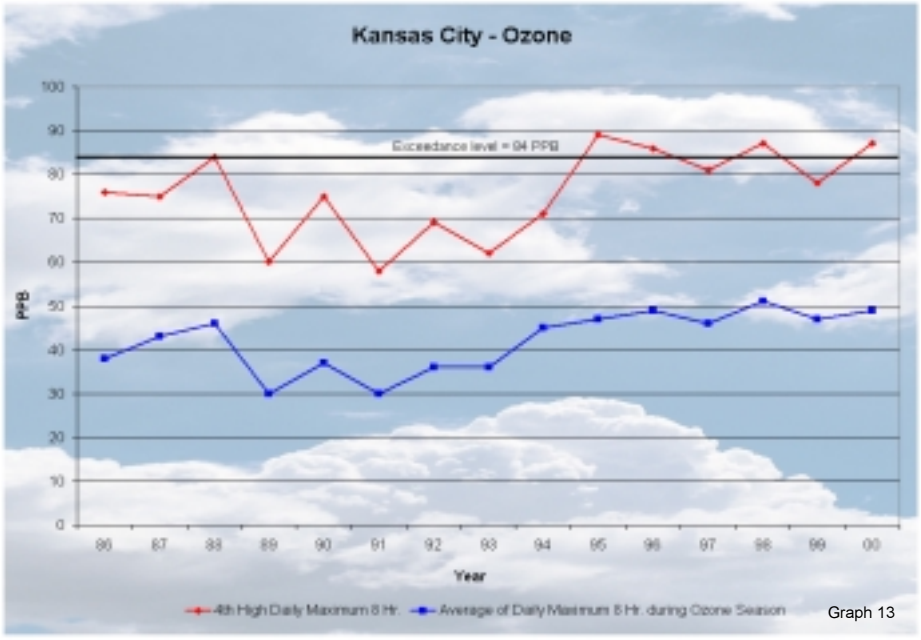


Graph 12

To address the short-term need to control emissions, Kansas promulgated a rule to limit the Reid Vapor Pressure (RVP) of the gasoline sold during the summer months in the KCMA to 7.2 pounds per square inch (psi). This regulation became effective May 2, 1997. To address the longer term need to reduce VOC and nitrogen oxide emissions, the Mid-America Regional Council's Air Quality Forum (AQF), comprised of representatives from local governments, business, health, and environmental organizations, agreed to examine various alternative control strategies and recommended the following measures: (1) expanding public education efforts; (2) low RVP gasoline; (3) motor vehicle inspection and maintenance; (4) seasonal no-fare public transit; (5) a voluntary clean fuel fleets program; and (6) additional transportation control measures. The motor vehicle inspection and maintenance program was rejected by the Missouri Air Conservation Commission.

ing site for the three-year period from 1993 to 1995. The recorded violation required KDHE to implement the contingency measures contained in the Maintenance Plan.

The contingency measures included 1) emissions offsets, 2) stage II vapor recovery or enhanced vehicle inspection and maintenance programs, 3) transportation control measures achieving a 0.5% of area wide VOC emissions reduction, and 4) an updated comprehensive emissions inventory for the Kansas City Metropolitan Area. In the weeks following the recorded exceedances, EPA was asked to provide guidance on the implementation of the contingency measures contained within the Maintenance Plan. The EPA responded by informing the states that they had flexibility in substituting other control measures beyond those specifically listed provided they resulted in equivalent emission reductions to those control measures contained in the plan.



Graph 13

The combination of nitrogen oxides and hydrocarbons in the presence of sunlight causes? a. global warming b. acid rain c. smog (ozone)

Photo by: Justus Welker, Unified Government of Wyandotte County-Kansas City, Kansas Health Department

In late July 1999, the governors of Kansas and Missouri petitioned the U.S. Environmental Protection Agency to allow the Kansas City area to opt into the reformulated gasoline (RFG) program to reduce automobile emissions and help the KCMA achieve the reductions in pollutants necessary to meet their obligations under the ozone plan. On January 4, 2000, a U.S. Court of Appeals ruled RFG could not be introduced into areas such as Kansas City. According to the court, the introduction of RFG exceeded the EPA's authority under the federal Clean Air Act.

Subsequently, the states proposed, and MARC concurred, that 7.0 RVP gasoline and a low vapor pressure solvent rule for cold cleaning operations be implemented in the KCMA to satisfy the contingency measures. Both Kansas and Missouri have rules in place requiring 7.0 RVP gasoline be sold each summer in the KCMA, beginning June 1, 2001. Both states are in the process of adopting the low vapor pressure solvent rule for cold cleaning operations.

Kansas and Missouri are also in the process of reviewing their maintenance plans to assure the plans are adequate to maintain the NAAQS for ozone in the KCMA. The reviews, and any modifications, will be submitted to EPA in 2002. This review will also require the states to update their emissions budgets for the KCMA.

At the same time, EPA has developed a more stringent eight-hour ozone standard for the country. Although this new standard is now being challenged in federal court, it is possible that if the Kansas City area continues its concentrations of ozone as in recent years, it will violate the new ozone standard, if and when it is implemented. The graphs on page 29 contain a combination of data from the ozone monitor that was located at the Unified Government Health Dept. through March of 1999. This monitor was relocated to the JFK Community Center in late March 1999 and began recording ozone readings on April 1, 1999.